

APPENDIX NIM (NETWORK INTERCONNECTION METHODS)

TABLE OF CONTENTS

1. INTRODUCTION	3
2. PHYSICAL ARCHITECTURE.....	4
3. METHODS OF INTERCONNECTION.....	6
4. RESPONSIBILITIES OF THE PARTIES	9
5. JOINT FACILITY GROWTH PLANNING	10
6. LEASING OF FACILITIES.....	12
7. APPLICABILITY OF OTHER RATES, TERMS AND CONDITIONS	13

**APPENDIX NIM
(NETWORK INTERCONNECTION METHODS)**

1. INTRODUCTION

- 1.1 This Appendix sets forth the terms and conditions that Network Interconnection Methods (NIM) is provided by the applicable SBC Communications Inc. (SBC) owned Incumbent Local Exchange Carrier (ILEC) and TWTC. This Appendix describes the physical architecture for Interconnection of the Parties' facilities and equipment for the transmission and routing of Telephone Exchange Service traffic and Exchange Access traffic between the respective Customers of the Parties pursuant to Section 251(c)(2) of the Act; provided, however, Interconnection may not be used solely for the purpose of originating a Party's own interexchange traffic.
- 1.2 SBC Communications Inc. (SBC) means the holding company which owns the following ILECs: Illinois Bell Telephone Company, Indiana Bell Telephone Company Incorporated, Michigan Bell Telephone Company, Nevada Bell Telephone Company, The Ohio Bell Telephone Company, Pacific Bell Telephone Company, The Southern New England Telephone Company, Southwestern Bell Telephone Company and/or Wisconsin Bell, Inc. d/b/a Ameritech Wisconsin.
- 1.3 **AM-WI** - As used herein, **AM-WI** means the above listed ILECS doing business in Wisconsin.
- 1.4 Network Interconnection Methods (NIMs) include, but are not limited to, Physical Collocation Interconnection; Virtual Collocation Interconnection; Leased Facilities Interconnection; Fiber Meet Interconnection (i.e. Joint SONET); and other methods as mutually agreed to by the Parties. One or more of these methods may be used to effect the Interconnection in each local exchange area and each LATA (in **AM-WI**).
- 1.4.1 Trunking requirements associated with Interconnection (including local exchange and LATA trunking requirements) are contained in Appendix ITR.
- 1.4.2 Interconnection associated with Unbundled Network Elements (UNEs) is contained in Appendix UNE.
- 1.5 **AM-WI** shall provide Interconnection for TWTC's facilities and equipment for the transmission and routing of telephone exchange service and exchange access, at a level of quality that is equal to that which **AM-WI** provides itself, a subsidiary, an affiliate, or any other party to which **AM-WI** provides Interconnection and on rates, terms and conditions that are just, reasonable and non-discriminatory.

- 1.6 The Parties shall effect an Interconnection that is efficient, fair and equitable with each party being financially responsible for approximately half of the Interconnection facilities or in any other manner that is mutually agreeable to the Parties. Neither Party shall require the other Party to construct unnecessary facilities for the purpose of interconnection.

2. PHYSICAL ARCHITECTURE

- 2.1 AM-WI's network is partly comprised of End Office switches, Tandem switches that serve local only traffic, Tandem switches that serve IntraLATA and InterLATA traffic, and Tandem switches that serve a combination of local, IntraLATA and InterLATA traffic. AM-WI's network architecture in any given local exchange area and/or LATA can vary markedly from another local exchange area/LATA. Using one or more of the NIMs herein, the Parties will agree to a physical architecture plan for a specific Interconnection area. Due to differing state regulatory calling scope requirements, AM-WI requires Interconnection at all tandems in a LATA. TWTC and AM-WI agree to Interconnect their networks through existing and/or new Interconnection facilities between TWTC switch(es) and AM-WI End Office(s) and/or Tandem switch(es). The physical architecture plan will, at a minimum, include the location of TWTC's switch(es) and AM-WI's End Office switch(es) and/or Tandem switch(es) to be interconnected, the facilities that will connect the two networks and which Party will provide (be financially responsible for) the Interconnection facilities. At the time of implementation in a given local exchange area the plan will be documented and signed by appropriate representatives of the Parties, indicating their mutual agreement to the physical architecture plan.
- 2.2 Points of Interconnection (POIs): A Point of Interconnection (POI) is a point in the network where the Parties deliver Interconnection traffic to each other, and also serves as a demarcation point between the facilities that each Party is responsible to provide. In many cases, multiple POI(s) will be necessary to balance the facilities investment and provide the best technical implementation of Interconnection requirements to each Tandem within an exchange area and/or LATA. Both parties shall negotiate the architecture in each location that will seek to mutually minimize and equalize investment.
- 2.3 The Parties agree to meet as often as necessary to negotiate the selection of new POIs. The overall goal of POI selection will be to achieve a balance in the provision of facilities that is fair to both Parties. Criteria to be used in determining POIs for each geography (LATA, tandem area, etc.) include existing facility capacity, location of existing POIs, traffic volumes, relative costs, future capacity needs, network survivability, etc. Agreement to the location of POIs is based on the network architecture existing at the time the POI(s) is/are negotiated. In the event either Party makes subsequent changes to its network architecture, including but not limited to trunking changes or adding new switches, then the

Parties will negotiate new POIs. The mutually agreed to POIs will be documented and distributed to both Parties.

- 2.4 Each Party is responsible for the facilities to its side of the POI(s) and may utilize any method of Interconnection described in this Appendix. Each Party is responsible for the appropriate sizing, operation, and maintenance of the transport facility to the POI(s). At least one POI must be established within the geographic area where AM-WI operates as an incumbent LEC and TWTC has a switch and End Users in that area.
- 2.5 Either Party, must provide thirty (30) days written notice of any changes to the physical architecture plan. To the extent changes to physical architecture may be financially impacting to either Party, such changes shall be agreed to before the changes are implemented.
- 2.6 In each LATA the Parties agree to provide, at a minimum, sufficient facilities so that a local Interconnection trunk group can be established from the TWTC switch to each AM-WI Access Tandem where TWTC originates or terminates local and/or toll traffic with AM-WI.
- 2.7 TWTC is solely responsible for the facilities that carry ancillary services (i.e. OS/DA, 911, mass calling, etc.). AM-WI may allow, solely at its discretion, TWTC to use jointly provided Interconnection facilities to carry ancillary service traffic.
- 2.8 If TWTC has established Collocation in an AM-WI End Office, direct End Office trunks to that End Office shall be provisioned over TWTC Collocation facility. If TWTC has not established Collocation in an AM-WI End Office, AM-WI shall provision the facilities for the direct End Office trunks from the POI to the AM-WI End Office.
- 2.9 Technical Interfaces
- 2.9.1 The Interconnection facilities provided by each Party shall be formatted using either Alternative Mark Inversion (AMI) line code with Superframe format framing or B8ZS with Extended Superframe format framing.
- 2.9.2 Electrical handoffs at the POI(s) will be DS1 or DS3 as mutually agreed to by the parties. When a DS3 handoff is agreed to by the Parties, AM-WI will provide any multiplexing required for DS1 facilities or trunking at their end and TWTC will provide any DS1 multiplexing required for facilities or trunking at their end.

- 2.9.3 Other interfaces may be established when either Party demonstrates the need for Optical handoffs at the OC-n level. The Parties will promptly meet to negotiate specific Optical handoff need and implementation date.

3. METHODS OF INTERCONNECTION

3.1 Physical Collocation Interconnection

- 3.1.1 When TWTC provides their own facilities or uses the facilities of a 3rd party to a AM-WI Tandem or End Office and wishes to place their own transport terminating equipment at that location, TWTC may Interconnect using the provisions of Physical Collocation as set forth in Appendix Collocation or applicable state tariff.

3.2 Virtual Collocation Interconnection

- 3.2.1 When TWTC provides their own facilities or uses the facilities of a 3rd party to a AM-WI Tandem or End Office and wishes for AM-WI to place transport terminating equipment at that location on TWTC's behalf, they may Interconnect using the provisions of Virtual Collocation as set forth in Appendix Collocation or applicable tariff. Virtual Collocation allows TWTC to choose the equipment vendor and does not require that TWTC be Physically Collocated.

3.3 Leased Facility Interconnection ("LFI")

- 3.3.1 Where facilities exist, either Party may lease facilities from the other Party as defined in Section 6 of this Appendix.

3.4 Fiber Meet Interconnection

- 3.4.1 Fiber Meet Interconnection between AM-WI and TWTC can occur at any mutually agreeable, economically and technically feasible point between TWTC's premises and a AM-WI Tandem or End Office within each local exchange or LATA.
- 3.4.2 Where the Parties interconnect their networks pursuant to a Fiber Meet, the Parties shall jointly engineer and operate this Interconnection as a single Synchronous Optical Network (SONET) transmission linear chain system. Only Interconnection trunks shall be provisioned over this facility.
- 3.4.3 Neither Party will be allowed to access the Data Communications Channel ("DCC") of the other Party's Fiber Optic Terminal (FOT). The Fiber Meet will be designed so that each Party may, as far as is technically feasible, independently select the transmission, multiplexing, and fiber terminating

equipment to be used on its side of the POI(s). The Parties shall work cooperatively to achieve equipment and vendor compatibility of the FOT equipment. Requirements for such Interconnection specifications will be defined in joint engineering planning sessions between the Parties. The Parties may share the investment of the fiber as mutually agreed. The Parties will use good faith efforts to develop and agree on these facility arrangements within ninety (90) days of the determination by the Parties that such specifications shall be implemented, and in any case, prior to the establishment of any Fiber Meet arrangements between them.

3.4.4 There are four basic Fiber Meet design options. The Parties agree to support existing Joint SONET architectures implemented between TWTC and SBC-Ameritech under predecessor interconnection agreement(s) for the duration of this interconnection agreement. However, this provision does not supercede or eliminate other requirements and obligations in this Agreement and associated Amendments.

3.4.4.1 Design One: TWTC's fiber cable (four fibers) and AM-WI fiber cable (four fibers) are connected at an economically and technically feasible point between TWTC and AM-WI locations. This Interconnection point would be at a mutually agreeable location approximately midway between the two. The Parties fiber cables would be terminated and then cross connected on a fiber termination panel as discussed below under the Fiber Termination Point options section. Each Party would supply a fiber optic terminal at their respective end. The POI would be at the fiber termination panel at the mid-point meet.

3.4.4.2 Design Two: TWTC will provide fiber cable to the last entrance (or AM-WI designated) manhole at the AM-WI Tandem or End Office switch. AM-WI shall make all necessary preparations to receive and to allow and enable TWTC to deliver fiber optic facilities into that manhole. TWTC will provide a sufficient length of Optical Fire Resistant (OFR) cable for AM-WI to pull the fiber cable through the AM-WI cable vault and terminate on the AM-WI fiber distribution frame (FDF) in AM-WI's office. TWTC shall deliver and maintain such strands wholly at its own expense up to the POI. AM-WI shall take the fiber from the manhole and terminate it inside AM-WI's office on the FDF at AM-WI's expense. In this case the POI shall be at the AM-WI designated manhole location.

3.4.4.3 Design Three: AM-WI will provide fiber cable to the last entrance (or TWTC designated) manhole at the TWTC location. TWTC shall make all necessary preparations to receive and to

allow and enable AM-WI to deliver fiber optic facilities into that manhole. AM-WI will provide a sufficient length of Optical Fire Resistant (OFR) cable for TWTC to run the fiber cable from the manhole and terminate on the TWTC fiber distribution frame (FDF) in TWTC's location. AM-WI shall deliver and maintain such strands wholly at its own expense up to the POI. TWTC shall take the fiber from the manhole and terminate it inside TWTC's office on the FDF at TWTC's expense. In this case the POI shall be at the TWTC designated manhole location.

- 3.4.4.4 Design Four: Both TWTC and AM-WI each provide two fibers between their locations. This design may only be considered where existing fibers are available and there is a mutual benefit to both Parties. AM-WI will provide the fibers associated with the "working" side of the system. AM-WI will provide TWTC with information that describes the physical path that the AM-WI provided fibers will traverse such that TWTC can achieve route diversity, where desired, with the two fibers provided by TWTC. TWTC will provide the fibers associated with the "protection" side of the system. The Parties will work cooperatively to terminate each other's fiber in order to provision this joint point-to-point linear chain SONET system. Both Parties will work cooperatively to determine the appropriate technical handoff for purposes of demarcation and fault isolation. The POI will be defined as being at the AM-WI location.
- 3.4.5 TWTC location includes all TWTC FOTs, multiplexing and fiber required to terminate the optical signal provided from AM-WI. This location is TWTC's responsibility to provision and maintain.
- 3.4.6 The AM-WI location includes all AM-WI FOT, multiplexing and fiber required to terminate the optical signal provided from TWTC. This location is AM-WI's responsibility to provision and maintain.
- 3.4.7 AM-WI and TWTC shall, solely at their own expense, procure, install, and maintain the agreed-upon FOT equipment in each of their locations where the Parties established a Fiber Meet in capacity sufficient to provision and maintain all trunk groups prescribed by Appendix ITR for the purposes of Interconnection.
- 3.4.8 Each Party shall provide its own, unique source for the synchronized timing of its FOT equipment. Each timing source must be Stratum-1 traceable and cannot be provided over DS0/DS1 facilities, via Line Timing; or via a Derived DS1 off of FOT equipment. Both Parties agree

to establish separate and distinct timing sources which are not derived from the other, and meet the criteria identified above.

- 3.4.9 TWTC and AM-WI will mutually agree on the capacity of the FOT(s) to be utilized based on equivalent DS1s or DS3s. Each Party will also agree upon the optical frequency and wavelength necessary to implement the Interconnection. The Parties will develop and agree upon methods for the capacity planning and management for these facilities, terms and conditions for over provisioning facilities, and the necessary processes to implement facilities as indicated below. These methods will be compatible and meet quality standards (i.e. ANSI, NEBS, Telcordia, etc.) as mutually agreed to by TWTC and AM-WI.

3.5 Other Interconnection Methods

- 3.5.1 Other Interconnection methods that are technically feasible may be mutually agreed to by the Parties.

4. **RESPONSIBILITIES OF THE PARTIES**

- 4.1 If TWTC determines to offer local Interconnection within an AM-WI area, TWTC shall provide written notice to AM-WI of the need to establish Interconnection in each local exchange area or LATA. Such request shall include (i) TWTC's Switch address, type of Switch and CLLI code; (ii) TWTC's requested Interconnection activation date; and (iii) a non-binding forecast of TWTC's trunking and facilities requirements.
- 4.2 Upon receipt of TWTC's notice to interconnect, the Parties shall schedule a meeting within 21 days. The Parties shall negotiate and mutually agree on the network architecture (including trunking) to be documented as discussed in Section 2.1. The Interconnection activation date for an Interconnect shall be established based on then-existing force and load, the scope and complexity of the requested Interconnection and other relevant factors. Parties shall use best efforts to timely implement new network interconnections and agree that implementation "clock" shall begin with the initial meeting.
- 4.3 If TWTC deploys additional switches in a LATA after the Effective Date or otherwise wishes to establish Interconnection with additional AM-WI Central Offices, TWTC shall provide written notice to AM-WI, to establish such Interconnection. The terms and conditions of this Agreement shall apply to such Interconnection. If AM-WI deploys additional Tandems and/or End Office switches in a local exchange/LATA after the effective date or otherwise wishes to establish Interconnection with additional TWTC Central Offices in such local exchange/LATA, AM-WI shall be entitled, upon written notice to TWTC, to establish such Interconnection and the terms and conditions of this Agreement shall apply to such Interconnection.

- 4.4 TWTC and AM-WI shall work cooperatively to install and maintain a reliable network. TWTC and AM-WI shall exchange appropriate information (e.g., maintenance contact numbers, network information, information required to comply with law enforcement and other security agencies of the government and such other information as the Parties shall mutually agree) to achieve this desired reliability.
- 4.5 TWTC and AM-WI will review engineering requirements on a semi-annual basis and establish forecasts for facilities utilization provided under this agreement.
- 4.6 TWTC and AM-WI shall:
- 4.6.1 Provide trained personnel with adequate and compatible test equipment to work with each other's technicians.
 - 4.6.2 Promptly notify each other when there is any change affecting the service requested, including the due date.
 - 4.6.3 Coordinate and schedule testing activities of their own personnel, and others as applicable, to ensure its interconnection trunks/trunk groups are installed per the interconnection order, meet industry standard acceptance test requirements, and are placed in service by the due date.
 - 4.6.4 Perform trouble sectionalization to determine if a trouble is located in its facility or its portion of the interconnection trunks prior to referring the trouble to each other.
 - 4.6.5 Upon request in AM-WI, Parties will make available a notification process to advise each other if there is an equipment failure that will affect the interconnection trunks.
 - 4.6.6 Provide each other with a trouble reporting number, and corresponding escalation lists up through Vice President level, that is readily available 24 hours per day/7 days per week.
 - 4.6.7 Recognize that a facility handoff point must be agreed to that establishes the demarcation for maintenance and provisioning responsibilities for each party on their side of the POI.

5. JOINT FACILITY GROWTH PLANNING

- 5.1 The initial fiber optic system deployed for each Interconnection shall be agreed to by the Parties. The following lists the criteria and processes needed to satisfy additional capacity requirements beyond the initial system.

5.2 Criteria:

- 5.2.1 Investment is to be minimized.
- 5.2.2 Facilities will be planned for in accordance with the trunk forecasts exchanged between the Parties as described in Appendix ITR and are to be deployed in accordance with the Processes described below.

5.3 Processes:

- 5.3.1 In addition to the semi-annual forecast process, discussions to provide relief to existing facilities can be initiated at any time by either party. Discussions to provide relief will be triggered when either Party recognizes that the overall system facility reaches 60 % capacity or when either Party is aware of circumstances that will require additional facilities to meet customer demand.
- 5.3.2 Both Parties will perform a joint validation to ensure current Interconnection facilities and associated trunks have not been over-provisioned. If any facilities and/or associated trunks are over-provisioned, the Parties will turn down those facilities or trunks unless otherwise agreed to. Facility relief discussions will be triggered as discussed above, and all effort will be made to adhere to the trunk design blocking criteria described in Appendix ITR.
- 5.3.3 If based on the forecasted equivalent DS-1/DS-3 growth where the existing fiber optic system is not projected to exhaust within one year, the Parties will suspend further relief planning on this Interconnection until such time that the network growth patterns change. Either Party may re-initiate the joint planning process.
- 5.3.4 If the placement of a minimum size system will not provide adequate augmentation capacity for the joint forecast over a two-year period and the forecast appears reasonable, a larger system shall be deployed. This criteria assumes both Parties have adequate fibers for the augmentation. If adequate fibers do not exist, both Parties would negotiate placement of additional fibers.
- 5.3.5 Both Parties will negotiate a project service date and corresponding work schedule to construct relief facilities prior to facilities exhaust.
- 5.3.6 The Parties shall use good faith efforts to complete the joint planning process/negotiations as soon as possible, but not to exceed 60 days.

6. LEASING OF FACILITIES

- 6.1 The purpose of this section is to cover both TWTC's and AM-WI's leasing of facilities from each other for purposes of Interconnection. AM-WI offers leased facilities from the applicable Access Tariff.
- 6.2 The Parties leasing of facilities from each other for purposes of this Appendix will be subject to mutual agreement of the Parties.
- 6.3 Leasing of facilities from either party for the above purposes and any future augmentations are subject to facility availability at the time of the written request.
- 6.4 The requesting Party will provide a written leased facility request that will specify the A- and Z-ends (CLLI codes, where known), equipment and multiplexing required and provide quantities requested. Requests for leasing of facilities for the purposes of Interconnection and any future augmentations are subject to facility availability at the time of the request. Applicable rates, terms and conditions will be determined at the time of the request.
- 6.5 Any request by either Party for leased facilities where facilities, equipment, or riser cable do not exist will be considered and the requested Party may agree to provide under a Bona Fide Request (BFR) Process as defined below, unless otherwise provided out of a tariff, at the providing Party's sole discretion:
 - 6.5.1 A BFR will be submitted by the requesting Party in writing and will include a description of the facilities needed including the quantity, size (DS1 or DS3), A- and Z-end of the facilities, equipment and multiplexing requirements, and date needed.
 - 6.5.2 The requesting Party may cancel a BFR at any time, but will pay the requested Party for reasonable and demonstrable costs of processing and/or implementing the BFR up to the date of cancellation.
 - 6.5.3 Within ten (10) business days of its receipt, the requested Party will acknowledge receipt of the BFR, and provide preliminary analysis if available.
 - 6.5.4 Except under extraordinary circumstances, within thirty (30) business days of its receipt of a BFR, the requested Party will provide to the requesting Party a written response to the request. The response will confirm whether the leased facilities will be offered or not. If the leased facilities will be offered, the requested Party will provide the requesting Party a BFR quote that will include the applicable recurring rates and installation intervals.

6.5.5 Within 65 calendar days of its receipt of the BFR quote, the requesting Party must confirm its order. If not confirmed within 65 calendar days, the requested Party reserves the right to modify or withdraw its BFR quote.

7. APPLICABILITY OF OTHER RATES, TERMS AND CONDITIONS

7.1 Every interconnection, service and network element provided hereunder, shall be subject to all rates, terms and conditions contained in this Agreement which are legitimately related to such interconnection, service or network element. Without limiting the general applicability of the foregoing, the following terms and conditions of the General Terms and Conditions are specifically agreed by the Parties to be legitimately related to, and to be applicable to, each interconnection, service and network element provided hereunder: definitions, interpretation, construction and severability; notice of changes; general responsibilities of the Parties; effective date, term and termination; fraud; deposits; billing and payment of charges; non-payment and procedures for disconnection; dispute resolution; audits; disclaimer of representations and warranties; limitation of liability; indemnification; remedies; intellectual property; publicity and use of trademarks or service marks; no license; confidentiality; intervening law; governing law; regulatory approval; changes in End User local exchange service provider selection; compliance and certification; law enforcement; no third party beneficiaries; disclaimer of agency; relationship of the Parties/independent contractor; subcontracting; assignment; responsibility for environmental contamination; force majeure; taxes; non-waiver; network maintenance and management; signaling; transmission of traffic to third parties; customer inquiries; expenses; conflicts of interest; survival; scope of agreement; amendments and modifications; and entire agreement.